

## CLAIMS

## 1. A self-opening bag stack comprising:

5 a plurality of stacked polyethylene film bags comprising about 40-48 wt. % high density, high molecular weight polyethylene, 12-20 wt. % high density, medium molecular weight polyethylene, 20-30 wt. % linear low density polyethylene, 0-8 wt. % color concentrate, releasably adhered together in substantial registration;

10 each of said bags including front and rear polyethylene film walls, each of said front and rear walls having first and second side edges, a top edge and a bottom edge;

said front and rear walls being integrally joined at their first and second side edges and secured together at their bottom edges and defining an open mouth portion adjacent said top edges; and

15 at least an upper portion of an outer surface of said front and rear walls of each of said bags having been corona treated.

2. The self-opening bag stack, as described in Claim 1, further comprising 0.5 wt. % slip and antiblock compound.

20 3. The self-opening bag stack, as described in Claim 1, further comprising 1-3 wt. % calcium carbonate.

4. The self-opening bag stack, as described in Claim 1, further comprising 10-20 wt. % recycled material, said recycled material comprising about 40-48 wt. % high density, high molecular weight polyethylene, 12-20 wt. % high density, medium molecular weight polyethylene, 20-30 wt. % linear low density polyethylene, 0-8 wt. % color concentrate.  
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5. The self-opening bag stack, as described in Claim 1, wherein 10-15 wt. % of said linear low density polyethylene has a density ranging from .923-.924 gm/cc.
- 10 6. The self-opening bag stack, as described in Claim 1, wherein 10-15 wt. % of said linear low density polyethylene has a melt index ranging from .25-.30 gm/10 minutes.
7. The self-opening bag stack, as described in Claim 1, wherein said high density, medium molecular weight polyethylene has a density ranging from .937-.947 gm/cc.  
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8. The self-opening bag stack, as described in Claim 1, wherein said high density, medium molecular weight polyethylene has a melt index ranging from .10-.30 gm/10 minutes.
- 20 9. The self-opening bag stack, as described in Claim 1, further comprising at least one cold staking area piercing and extending transversely through said bag stack for maintaining the bags in said bag stack in substantial registration.

10. The self-opening bag stack, as described in Claim 1, further comprising at least one hot melt pin area piercing and extending transversely through said bag stack for maintaining the bags in said bag stack in substantial registration.

5 11. The self-opening bag stack, as described in Claim 1, wherein each of said bags includes longitudinally oriented side gussets.

12. The self-opening bag stack, as described in Claim 1, further comprising:

10 first and second openings, said first and second openings penetrating and extending transversely through said bag stack in an upper portion of the bags; and  
said openings being spaced downwardly from said top edge, spaced inwardly from said first and second side edges and serving to support said bag stack on horizontal arms of a dispensing rack.

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13. The self-opening bag stack, as described in Claim 11, wherein each of the bags of the bag stack further comprises:

an upper seam, said upper seam sealing said front wall to said rear wall at their respective top edges; and  
20 a U-shaped cut-out, said U-shaped cut-out being disposed in an upper portion of said bag and commencing at a first point along said upper seam spaced inwardly from said first side edge and extending to a second point along the upper seam spaced inwardly from said second side

edge, said cut-out extending downwardly toward said bottom edges,  
thereby forming an open mouth portion and a pair of bag handles.

14. The self-opening bag stack, as described in Claim 13, further comprising:

5 first and second openings, said first and second openings penetrating and  
extending transversely through said bag stack in an upper portion of  
said bag handles; and  
said openings being spaced downwardly from said upper seam and serving to  
support said bag stack on horizontal arms of a dispensing rack.

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15. The self-opening bag stack, as described in Claim 13, further comprising at least one  
cold staking area piercing and extending transversely through said bag stack in said  
bag handles for maintaining the bags in said bag stack in substantial registration.

15 16. The self-opening bag stack, as described in Claim 13, further comprising at least one  
hot melt pin area piercing and extending transversely through said bag stack in said  
bag handles for maintaining the bags in said bag stack in substantial registration.

17. The self-opening bag stack, as described in Claim 1 or Claim 13, further comprising:  
20 a central tab portion connected to said open mouth portion of said bags in said  
bag stack; and

an aperture, said aperture extending transversely through said bag stack within  
said central tab portion for suspending said bag stack from a dispensing  
member.

- 5     18.     The self-opening bag stack, as described in Claim 17, further comprising at least one  
cold staking area piercing and extending transversely through said bag stack in said  
central tab portion for maintaining the bags in said bag stack in substantial registration.
- 10     19.     The self-opening bag stack, as described in Claim 17, further comprising at least one  
hot melt pin area piercing and extending transversely through said bag stack in said  
central tab portion for maintaining the bags in said bag stack in substantial registration.
- 15     20.     The self-opening bag stack, as described in Claim 17, wherein said central tab portion  
of each bag in said bag stack is detachably connected to said open mouth portion of  
said bags.
- 20     21.     The self-opening bag stack, as described in Claim 17, wherein:  
said central tab portion of each bag in said bag stack includes a frangible  
section;  
said frangible section extending from said aperture to an outer edge of said  
central tab portion; and  
said frangible portion rupturing upon removal of said bag from said dispensing  
member.

22. The self-opening bag stack, as described in Claim 1 wherein the degree of corona treatment on said outer surfaces of said front and rear walls of each of said bags is an amount sufficient to result in a surface tension on said corona treated surface of at least about 38 dynes/cm.

23. A self-opening bag stack of t-shirt type bags comprising:

a plurality of stacked polyethylene film bags comprising about 40-48 wt. %

high density, high molecular weight polyethylene, 12-20 wt. % high

density, medium molecular weight polyethylene, 20-30 wt. % linear

low density polyethylene, 0-8 wt. % color concentrate, releasably

adhered together in substantial registration;

each of said bags including front and rear polyethylene film walls, each of said

front and rear walls having first and second side edges, a top edge and a

bottom edge;

said front and rear walls being integrally joined at their first and second side

edges and secured together at their bottom edges and defining an open

mouth portion adjacent said top edges;

each of said bags comprising laterally spaced upwardly extending bag handles,

an open mouth portion between said handles and a central support tab

portion extending upwardly from said open mouth portion; and

at least an upper portion of the outer surface of the front and rear walls of each

of said bags having been corona treated.

24. The self-opening bag stack, as described in Claim 23, further comprising 0.5 wt. % slip and antiblock compound.
- 5 25. The self-opening bag stack, as described in Claim 23, further comprising 1-3 wt. % calcium carbonate.
26. The self-opening bag stack, as described in Claim 23, further comprising 10-20 wt. % recycled material, said recycled material comprising about 40-48 wt. % high density,  
10 high molecular weight polyethylene, 12-20 wt. % high density, medium molecular weight polyethylene, 20-30 wt. % linear low density polyethylene, 0-8 wt. % color concentrate.
27. The self-opening bag stack, as described in Claim 23, wherein 10-15 wt. % of said  
15 linear low density polyethylene has a density ranging from .923-.924 gm/cc.
28. The self-opening bag stack, as described in Claim 23, wherein 10-15 wt. % of said linear low density polyethylene has a melt index ranging from .25-.30 gm/10 minutes.
- 20 29. The self-opening bag stack, as described in Claim 23, wherein said high density, medium molecular weight polyethylene has a density ranging from .937-.947 gm/cc.

30. The self-opening bag stack, as described in Claim 23, wherein said high density, medium molecular weight polyethylene has a melt index ranging from .10-.30 gm/10 minutes.

5 31. The self-opening bag stack, as described in Claim 23, further comprising at least one cold staking area piercing and extending transversely through said bag stack for maintaining the bags in said bag stack in substantial registration.

10 32. The self-opening bag stack, as described in Claim 23, further comprising at least one hot melt pin area piercing and extending transversely through said bag stack for maintaining the bags in said bag stack in substantial registration.

33. The self-opening bag stack, as described in Claim 23, wherein each of said bags includes longitudinally oriented side gussets.

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34. The self-opening bag stack, as described in Claim 23, further comprising:  
     first and second openings, said first and second openings penetrating and  
     extending transversely through said bag stack said bag stack in an upper  
     portion of said bag handles; and  
     said openings being spaced downwardly from said upper seam and serving to  
     support said bag stack on horizontal arms of a dispensing rack.

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35. The self-opening bag stack, as described in Claim 23, further comprising at least one cold staking area piercing and extending transversely through said bag stack in said bag handles for maintaining the bags in said bag stack in substantial registration.
- 5 36. The self-opening bag stack, as described in Claim 23, further comprising at least one hot melt pin area piercing and extending transversely through said bag stack in said bag handles for maintaining the bags in said bag stack in substantial registration.
- 10 37. The self-opening bag stack, as described in Claim 23, further comprising an aperture, said aperture extending transversely through said bag stack within said central tab portion for suspending said bag stack from a dispensing member.
- 15 38. The self-opening bag stack, as described in Claim 23, further comprising at least one cold staking area piercing and extending transversely through said bag stack in said central tab portion for maintaining the bags in said bag stack in substantial registration.
- 20 39. The self-opening bag stack, as described in Claim 23, further comprising at least one hot melt pin area piercing and extending transversely through said bag stack in said central tab portion for maintaining the bags in said bag stack in substantial registration.
40. The self-opening bag stack, as described in Claim 23, wherein said central tab portion of each bag in said bag stack is detachably connected to said open mouth portion of said bags.

41. The self-opening bag stack, as described in Claim 23, wherein:

said central tab portion of each bag in said bag stack includes a frangible  
section;

5 said frangible section extending from said aperture to an outer edge of said  
central tab portion; and

said frangible portion rupturing upon removal of said bag from said dispensing  
member.

10 42. The self-opening bag stack, as described in Claim 23 wherein the degree of corona  
treatment on said outer surfaces of said front and rear walls of each of said bags is an  
amount sufficient to result in a surface tension on said corona treated surface of at least  
about 38 dynes/cm.

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